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Late Edition - Final**ARTS ONLINE;**
In Three Dimensions, Words Take Flight. Literally.**BYLINE:** By Matthew Mirapaul; E-mail: mirapaul@nytimes.com**SECTION:** Section E; Column 3; The Arts/Cultural Desk; Pg. 2**LENGTH:** 1046 words**DATELINE:** PROVIDENCE, R.I.

Robert Coover stood in the middle of the dark room, reading. He turned to view the section of the short story being projected on the wall to his right, then pointed his computer mouse at it. When he clicked, the word "just" seemed to peel away from the wall and drift across the space until it hovered, waist high, in front of him.

Mr. Coover's reading room on this hot August day was a virtual-reality chamber at Brown University. When viewers put on stereoscopic glasses and enter the space, the computer-generated text and images that are displayed on its walls and floor appear three dimensional. Viewers can watch as words materialize and swirl through the air around them, or they can step into a rotating cube to see an E. E. Cummings quotation that has been digitally inscribed on two of the walls. It is as if the words have sprung to life.

Science fiction? Science with fiction, really. For the past six months Mr. Coover, an English professor at Brown, and 18 of his students have been developing works for the virtual-reality chamber as part of an I.B.M.-sponsored graphics-research project. But while other Brown classes build 3-D renderings of coronary arteries and archaeological ruins for training and research purposes, Mr. Coover's students are experimenting with the digital word.

"We're trying to create something like literature," Mr. Coover said.

At this early stage the student efforts are closer to "Jaws 3-D" than "Moby-Dick." But whether the project eventually succeeds in producing something like literature, it is another step in electronic writing's evolution from a set of digitally interconnected words and sentences to an enveloping experience that augments the text with sound, video and nearly tangible 3-D imagery.

N. Katherine Hayles, a professor of English at U.C.L.A. with an interest in electronic writing, said: "For centuries literature has been delivered in a vehicle with a narrow sensory interface: the print book. As virtual-reality technologies become cheaper and more accessible, literature is moving into vehicles with richer sensory input." She said that readers in a virtual-reality environment might become involved in a story by reacting to a sound or pursuing a moving object rather than by responding solely to written words.

Not that such works are likely to arrive soon at a local bookstore. Virtual-reality environments remain costly to build and complex to run. Nonetheless some are already driven by personal computers instead of industrial-strength work stations. So one can foresee a time -- albeit distant -- when home entertainment centers will include small virtual-reality rigs, and readers will download 3-D novels from online libraries. The Internet can also connect virtual-reality chambers in different places, meaning that readers in far-flung spots may someday be able to read a story together: the ultimate reading club.

Mr. Coover, 70, shrugs off these futuristic notions, still unsure if the technology is right for writing. "It may not work very well," he said. "This may be a theatrical space more than a narrative or poetic space. Our use of text may be scripting more than either hearing or reading."

Some of the student experiments are closer to interactive theater and 3-D film than to books. For instance, an A. R. Ammons poem is illustrated with 3-D scenes that cinematically shift from a forest to a petri dish and finally to a graveyard while an unseen speaker recites the poem.

Digital artists elsewhere have played with virtual-reality environments since the advent of the technology, so these kinds of creative works are nothing new. But Mr. Coover has inspired some promising experiments.

In the peeling-text piece, for instance, a floating word may return to its original spot. Alternatively, as other words peel away and encircle the reader, it may drift to a new location and change the meaning of the sentence in which it now resides or else render it meaningless. Mr. Coover said this was a playful way to undermine "the dogmatic solidity of the printed text."

In a demonstration of a text-painting program, the mouse in Mr. Coover's hand acts like an airbrush nozzle, spraying strings of letters around the room as he gestures broadly. After the letters appear in space, they form words that literally hang in midair.

One of the difficulties with virtual writing, Mr. Coover admitted, is that mutating text -- especially when it is surrounded by animated images in a room awash with music -- can be hard to read. (Try reading this page while jiggling it in front of the television set.) The peeling text is so compelling, he said, that "when you ask afterward, 'What were the stories about?,' not many people noticed."

Mr. Coover said his students would continue to test ways to make virtual words more readable. This has been a problem for all electronic literature. Early works of hypertext fiction, as they were known, let readers click on a highlighted word and follow its hyperlink to another text passage. As computer power grew, though, the works incorporated sound, animated images and in several online pieces 3-D landscapes.

As Mr. Coover explained in a 1992 essay in The New York Times, "The **End of Books?**," electronic writing emerged as a way for authors to explore alternatives to the conventional novel's linear narrative.

So it makes sense for the next round of experimentation in electronic writing to be directed at installing literature in space. If hypertext fiction was designed to liberate literature from the benevolent dictatorship of the static printed page, Mr. Coover's students could free electronic writing from the tyranny of the two-dimensional computer screen. Mr. Coover's goal is to make a place for literature in all new media, a category that for him now includes virtual reality. "I'm not convinced that it's going to work to deliver literary art," Mr. Coover said, "but I don't want to be excluded from it."

But is this the faint beginning of the **end of the book?** "Hardly," Ms. Hayles said. "Books are much too robust, sophisticated and subtle to be displaced by electronic technologies. We should not see print and electronic literature as in competition but rather in conversation. The more voices that join in, the richer the dialogue is likely to be."

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GRAPHIC: Photo: **Robert Coover** with computer-generated text in a virtual-reality chamber at Brown University. (Vesper Stockwell)

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